

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Regional Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the compliance time schedule.
4. The Discharger shall report to the Regional Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986.
5. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy ( $\pm$  a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
  - d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
6. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not

Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

- a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
- b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

#### **B. Self Monitoring Reports (SMRs)**

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.
2. Monitoring results shall be submitted to the Regional Water Board by the **first day** of the second month following sample collection. Quarterly and annual monitoring results shall be submitted by the **first day of the second month following each calendar quarter, semi-annual period, and year**, respectively.
3. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD and Total Suspended Solids, shall be determined and recorded as needed to demonstrate compliance.
4. With the exception of flow, all constituents monitored on a continuous basis (metered), shall be reported as daily maximums, daily minimums, and daily averages; flow shall be reported as the total volume discharged per day for each day of discharge.
5. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

6. A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions.
7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Regional Water Quality Control Board  
Central Valley Region  
11020 Sun Center Dr., Suite #200  
Rancho Cordova, CA. 95670-6114

8. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

**Table E-8. Monitoring Periods and Reporting Schedule**

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	First day of second calendar month following month of sampling.
1/day	Permit effective date	Any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling.
1/week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following month of sampling.
1/month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 <sup>st</sup> day of calendar month through last day of calendar month	First day of second calendar month following month of sampling.
1/quarter	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	1 May 1 August 1 November 1 February
2/year	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31	1 August 1 February
1/year	January 1 following (or on) permit effective date	January 1 through December 31	1 February

### C. Discharge Monitoring Reports (DMRs)

[Not Applicable]

### D. Other Reports

1. **Progress Reports.** As specified in the compliance time schedules required in Special Provisions VI, progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

**Table E-9. Reporting Requirements for Special Provisions Progress Reports**

Special Provision	Reporting Requirements
Compliance Schedules for Final Effluent Limitations for Chlorodibromomethane, Cyanide, and Dichlorobromomethane, compliance with final effluent limitations.	<b>1 June</b> , annually, until final compliance
Compliance Schedules for Final Effluent Limitations for Ammonia	<b>1 June</b> , annually, until final compliance

2. Within **60 days** of permit adoption, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in Section 2.3 and 2.4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, adopted 2 March 2000 by the State Water Resources Control Board. All peaks identified by analytical methods shall be reported.
3. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs the raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Sanitary sewer overflows are prohibited by this Order. All violations must be reported as required in Standard Provisions. Facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage facilities.
4. **Annual Operations Report.** By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

- a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
- b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
- c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
- d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
- e. The Discharger may also be requested to submit an annual report to the Regional Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

Duplicate signed copies of these reports shall be submitted to the Regional Water Board and the:

State Water Resources Control Board  
Division of Water Quality  
P.O. Box 944213  
Sacramento, CA 94244-2130

and the

Regional Administrator  
U.S. Environmental Protection Agency W-5  
75 Hawthorne Street  
San Francisco, CA 94105

## ATTACHMENT F – FACT SHEET

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## ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

### I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

<b>WDID</b>	5A060102001
<b>Discharger</b>	Maxwell Public Utilities District
<b>Name of Facility</b>	Maxwell Public Utilities District Wastewater Treatment Plant
<b>Facility Address</b>	Section 3 T16N R3W, Intersection of East Avenue and South Avenue
	Maxwell, CA 95955
	Colusa County
<b>Facility Contact, Title and Phone</b>	Mr. David Wadsworth, Facilities Manager (530) 438-2505
<b>Authorized Person to Sign and Submit Reports</b>	Mr. David Wadsworth, Facilities Manager (530) 438-2505
<b>Mailing Address</b>	54 N. San Francisco Street (P.O. Box 294) Maxwell, CA 95955
<b>Billing Address</b>	Same as Mailing Address
<b>Type of Facility</b>	Publicly Owned Treatment Works
<b>Major or Minor Facility</b>	Minor
<b>Threat to Water Quality</b>	2
<b>Complexity</b>	B
<b>Pretreatment Program</b>	No
<b>Reclamation Requirements</b>	No
<b>Facility Permitted Flow</b>	0.2 (in million gallons per day)
<b>Facility Design Flow</b>	0.2 (in million gallons per day)
<b>Watershed</b>	Colusa Basin Hydrologic Unit, Colusa Trough Hydrologic Subarea (520.21)
<b>Receiving Water</b>	Unnamed Tributary To Lurline Creek
<b>Receiving Water Type</b>	Inland Surface Water – Ephemeral Stream



- A. Maxwell Public Utilities District (hereinafter Discharger) is the owner and operator of the Maxwell Public Utilities District Wastewater Treatment Plant (hereinafter Facility), a Publicly Owned Treatment Works (POTW).

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B. The Facility discharges wastewater to an unnamed tributary to Lurline Creek, a water of the United States, and is currently regulated by Order R5-2002-0022 which was adopted on 1 March 2002 and expired on 1 March 2007. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.
- C. The Discharger filed a report of waste discharge and submitted an application for renewal of its WDRs and NPDES permit on 26 July 2007.

## **II. FACILITY DESCRIPTION**

The Discharger provides sewerage service for the community of Maxwell and serves a population of approximately 1,060. The wastewater treatment plant (WWTP) design daily average flow capacity is 0.2 million gallons per day (mgd).

### **A. Description of Wastewater and Biosolids Treatment or Controls**

The treatment system at the Facility consists of comminution, aeration pond treatment, oxidation pond treatment, chlorination, and dechlorination. Sludge is continuously treated through the stabilization pond system and as necessary disposed off-site.

### **B. Discharge Points and Receiving Waters**

1. The Facility is located in Section 3, T16N, R3W, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point No. 001 to an unnamed tributary to Lurline Creek, a water of the United States and a tributary to Colusa Basin Drain at a point latitude 39°, 15', 55" N and longitude 122°, 11', 4" W.

### **C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data**

1. Effluent limitations contained in the existing Order for discharges from Discharge Point No. 001 (Monitoring Location EFF-001) and representative monitoring data from the term of the previous Order are as follows:

**Table F-2. Historic Effluent Limitations and Monitoring Data**

Parameter	Units	Effluent Limitation (From Adoption To January 2007)			Monitoring Data (From February 2002 To April 2007)		
		Average Monthly	Average Weekly	Average Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
BOD <sub>5</sub> <sup>1</sup>	mg/L	60	90	120	57	70	70
	lbs/day	100	150	200	71	127	127
Total Suspended Solids	mg/L	160	240	320	195	220	220
	lbs/day	267	401	534	175	225	225
Settleable Solids	ml/L	0.1	--	0.2	1.5	--	1.5
Total Coliform	MPN/100 mL	--	--	500 <sup>2</sup>	--	--	1600
Total Residual Chlorine	mg/L	0.010	--	0.012	2.01	--	2.20
	lbs/day	0.017	--	0.020	1.47	--	1.70
Ammonia	mg/L	Attachment <sup>3</sup>	--	--	1.63	--	--
	lbs/day	Attachment <sup>3</sup>	--	--	2	--	--
pH	standard unit	--	--	[6.5-8.5] <sup>4</sup>	--	--	[6.8-10] <sup>4</sup>

**Table F-2. Historic Effluent Limitations and Monitoring Data (continued...)**

Parameter	Units	Effluent Limitation (From Adoption To January 2007)			Monitoring Data (From February 2002 To April 2007)		
		30-Day Median	Average 4-Day	Average 1-Hour	Highest 30-Day Median Discharge	Highest Average 4-Day Discharge	Highest Average 1-Hour Discharge
Total Coliform	MPN/100 mL	23	--	--	1600	--	--
Total Residual Chlorine	mg/L	--	0.011	0.019	--	2.07	2.20
	lbs/day	--	0.018	0.032	--	1.57	1.70
Ammonia	mg/L	--	Attachment <sup>3</sup>	Attachment <sup>3</sup>	--	12	12
	lbs/day	--	Attachment <sup>3</sup>	Attachment <sup>3</sup>	--	33	33

<sup>1</sup> Biochemical Oxygen Demand (5-day @ 20 °C)

<sup>2</sup> Daily Maximum

<sup>3</sup> Temperature- and pH-, or pH-dependent effluent limitations

<sup>4</sup> Minimum to maximum pH range of values between the first and second numbers shown

**Table F-3. Historic Effluent Limitations and Monitoring Data**

Parameter	Units	Effluent Limitation (After January 2007)			Monitoring Data (From February 2007 To April 2007)		
		Average Monthly	Average Weekly	Average Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
BOD <sub>5</sub> <sup>1</sup>	mg/L	10	15	20	37	48	48
	lbs/day	17	25	33	32	49	49
Total Suspended Solids	mg/L	10	15	20	99	118	118
	lbs/day	17	25	33	68	79	79
Turbidity	NTU	--	--	2	--	--	71

**Table F-3. Historic Effluent Limitations and Monitoring Data (continued...)**

Parameter	Units	Effluent Limitation (After January 2007)			Monitoring Data (From February 2007 To April 2007)		
		7-Day Median	Instana- neous Maximum	Other	Highest 7-Day Median Discharge	Highest Instanta- neous Maximum Discharge	Other
Total Coliform	MPN/ 100 mL	2.2	23	240 <sup>2</sup>	1600	1600	--
Turbidity	NTU	--	5	10 <sup>3</sup>	--	71	--

<sup>1</sup> Biochemical Oxygen Demand (5-day @ 20 °C)

<sup>2</sup> The total coliform concentration shall not exceed 23 MPN/100 mL more than once in any 30-day period.  
No sample shall exceed a concentration of 240 MPN/100 mL

<sup>3</sup> The turbidity shall not exceed 5 NTU more than 5 percent of the time within a 24-hour period. At no time shall turbidity exceed 10 NTU.

<sup>4</sup> Minimum to maximum pH range of values between the first and second numbers shown

2. The Report of Waste Discharge describes the existing discharge as follows:

Design Flow:	0.2	mgd
Average Daily Flow Rate:	0.01	mgd
Maximum Daily Flow Rate:	0.82	mgd
Average Temperature, Summer:	21.8	°C
Average Temperature, Winter:	11.2	°C
Average BOD (5-day @ 20 °C):	23	mg/L
Maximum BOD (5-day @ 20 °C):	55	mg/L
Average Total Suspended Solids:	44	mg/L
Maximum Total Suspended Solids:	157	mg/L

#### **D. Compliance Summary**

1. The Discharger received a Notice of Violation from the Regional Water Board dated 30 June 2003. The Discharger was discharging treated wastewater to surface waters in violation of the Waste Discharge Requirements. The effluent pH, total coliform, total residual chlorine, ammonia, and total suspended solids were not in compliance with the requirements found in Order R5-2002-0022. In addition, the Discharger was found to have potential of violating the receiving water requirements for dissolved oxygen. As a result, the Regional Water Board adopted Administrative Civil Liability (ACL) Complaint No. 2003-0505 on 5 August 2003 with a penalty of \$588,000. The ACL Order allowed an alternative for the Discharger to spend an amount equivalent to the penalty toward the completion of a project to achieve compliance with WDRs.
2. The Discharger received a Notice of Violation from the Regional Water Board dated 8 June 2006. The Discharger was operating the Facility with personnel who do not have the appropriate State operator certification.
3. On 22 June 2007, the Regional Water Board adopted Time Schedule Order No. R5-2007-0073 which provided a compliance schedule for several pollutants. Full compliance is to be achieved by 18 May 2010 or sooner.

#### **E. Planned Changes**

The Discharger plans to dispose of all the Facility's wastewater via land disposal (subsurface irrigation or other land disposal operations) and cease the discharge to the unnamed tributary to Lurline Creek. During the term of this Order the Discharger will be evaluating the feasibility of land disposal options and the need for future discharges to the unnamed tributary to Lurline Creek during extremely high precipitation years.

### **III. APPLICABLE PLANS, POLICIES, AND REGULATIONS**

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in section II of the Limitations and Discharge Requirements (Findings). This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

#### **A. Legal Authority**

See Limitations and Discharge Requirements - Findings, Section II.C.

#### **B. California Environmental Quality Act (CEQA)**

See Limitations and Discharge Requirements - Findings, Section II.E.

### C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised October 2007), for the Sacramento and San Joaquin River Basins* (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Resources Control Board (State Water Board) Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. One of the exceptions provided in State Water Board Resolution No. 88-63 includes surface waters "...in systems designed or modified for the primary purpose of conveying or holding agricultural drainage waters..." The unnamed water bodies through which the Facility's wastewater flows were constructed for the purpose of conveying agricultural drainage waters. Lurline Creek, although originally a natural water body, has been modified for the purpose of conveying agricultural drainage waters. Therefore, the unnamed water body and Lurline Creek meet the criteria for a municipal exception under the State Water Board Resolution No. 88-63. If the Discharger does not cease the surface water discharge as planned, a Basin Plan amendment will be necessary to correct the beneficial use designations of Lurline Creek and the unnamed tributary.

The beneficial uses of the unnamed tributary to Lurline Creek downstream of the discharge are agricultural irrigation, agricultural stock watering, water contact recreation including canoeing and rafting, warm freshwater aquatic habitat, cold freshwater aquatic habitat (potential use), warm fish migration habitat, warm spawning habitat, and wildlife habitat. Other beneficial uses identified in the Basin Plan apply to Lurline Creek, including groundwater recharge and freshwater replenishment.

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...*" and with respect to disposal of wastewaters states that "*...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

The federal Clean Water Act (CWA) section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Sections 131.2 and 131.10 of 40 Code of Federal Regulations (CFR) require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e) of 40 CFR, defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or

not they are included in the water quality standards. Section 131.10 of 40 CFR requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

This Order contains effluent limitations requiring a tertiary level of treatment, or equivalent, which is necessary to protect the beneficial uses of the receiving water. The Regional Water Board has considered the factors listed in California Water Code (CWC) section 13241 in establishing these requirements, as discussed in more detail in Section IV.C.3.n of this Fact Sheet.

2. **Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in Section IV.D.4 of this Fact Sheet, the discharge is consistent with the antidegradation provisions of 40 CFR section 131.12 and State Water Board Resolution 68-16.
3. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and section 122.44(l) of 40 CFR prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Compliance with the anti-backsliding requirements is discussed in Section IV.D.3.
4. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of CWC, requires that *"the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective"*.

The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis based on information from Emergency Planning and Community Right to Know Act (EPCRA) cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to

an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to CWC section 13263.6(a).

However, as detailed elsewhere in this Order, available effluent data indicate that there are constituents present in the effluent that have a reasonable potential to cause or contribute to exceedances of water quality standards and require inclusion of effluent limitations based on federal and state laws and regulations.

5. **Stormwater Requirements.** United State Environmental Protection Agency (USEPA) promulgated Federal Regulations for storm water on November 16, 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the stormwater program and are obligated to comply with the Federal Regulations.
6. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

#### D. Impaired Water Bodies on CWA 303(d) List

1. Under Section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 30 November 2006 USEPA gave final approval to California's 2006 Section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of WQLSs, which are defined as "...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)." The Basin Plan also states, "Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment." The unnamed tributary to Lurline Creek is tributary to Lurline Creek, Colusa Trough, and Colusa Basin Drain. The listing for the Colusa Basin Drain includes: azinphos-methyl, carbofuran, diazinon, Group A pesticides, malathion, methyl parathion, molinate/ordram, and unknown toxicity.

2. **Total Maximum Daily Loads.** The USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body combination. No applicable TMDL has been developed for the unnamed tributary to Lurline Creek.

#### **E. Other Plans, Policies and Regulations**

1. The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20005 *et seq.* (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:
  - a. The waste consists primarily of domestic sewage and treated effluent;
  - b. For the reasons stated in Section IV.D.4.b, below, the waste discharge is consistent with water quality objectives. This Order includes groundwater limitations which require that the Discharger not cause the underlying groundwater to contain waste constituents in concentrations greater than background water quality or violate water quality objectives, impact beneficial uses, or cause pollution or nuisance. The Discharger is required to monitor groundwater to ensure the discharge does not degrade groundwater or cause an exceedence of water quality objectives; and
  - c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.
2. The State Water Board adopted the *Water Quality Control Policy for the Enclosed Bays and Estuaries of California*. The requirements within this Order are consistent with the Policy.

#### **IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS**

Effluent limitations and toxic standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

The federal CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., § 1311(b)(1)(C); 40 CFR 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to Federal Regulations, 40 CFR 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "are or may be discharged at a level which will cause, have the reasonable potential to cause,



*or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.” Federal Regulations, 40 CFR 122.44(d)(1)(vi), further provide that “[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.”*

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards, and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Regional Water Board's Basin Plan, page IV-17.00, contains an implementation policy (“Policy for Application of Water Quality Objectives”) that specifies that the Regional Water Board *“will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.”* This Policy complies with 40 CFR 122.44(d)(1). With respect to narrative objectives, the Regional Water Board must establish effluent limitations using one or more of three specified sources, including (1) USEPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Regional Water Board's “Policy for Application of Water Quality Objectives”)(40 CFR 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter. The Basin Plan contains a narrative objective requiring that: *“All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life”* (narrative toxicity objective). The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, discoloration, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. For waters designated as municipal, the Basin Plan specifies that, at a minimum, waters shall not contain concentrations of constituents that exceed Maximum Contaminant Levels (MCL) of CCR Title 22. The Basin Plan further states that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

#### **A. Discharge Prohibitions**

1. As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal Regulations, 40 CFR 122.41

(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 CFR 122.41 (m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

## **B. Technology-Based Effluent Limitations**

### **1. Scope and Authority**

Regulations promulgated in 40 CFR 125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), and pH.

### **2. Applicable Technology-Based Effluent Limitations**

- a. **BOD<sub>5</sub> and TSS.** Federal Regulations, 40 CFR 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD<sub>5</sub> and TSS. Tertiary treatment is necessary to protect the beneficial uses of the receiving stream and the final effluent limitations for BOD<sub>5</sub> and TSS are based on the technical capability of the tertiary process. BOD<sub>5</sub> is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The secondary and tertiary treatment standards for BOD<sub>5</sub> and TSS are indicators of the effectiveness of the treatment processes. The principal design parameter for wastewater treatment plants is the daily BOD<sub>5</sub> and TSS loading rates and the corresponding removal rate of the system. In applying 40 CFR 133 for weekly and monthly average BOD<sub>5</sub> and TSS limitations, the application of tertiary treatment processes results in the ability to achieve lower levels for BOD<sub>5</sub> and TSS than the secondary standards currently prescribed; the 30-day average BOD<sub>5</sub> and TSS limitations have been revised to 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD<sub>5</sub> and TSS is included in the Order to ensure that the treatment works are

not organically overloaded and operate in accordance with design capabilities. Monthly average, weekly average, and maximum daily BOD<sub>5</sub> and TSS effluent limitations (10 mg/L, 15 mg/L, 20 mg/L, respectively) have been carried over from the previous Order. See Table F-4 for final technology-based effluent limitations (TBELs) required by this Order. In addition, 40 CFR 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. If 85 percent removal of BOD<sub>5</sub> and TSS must be achieved by a secondary treatment plant, it must also be achieved by a tertiary (i.e., treatment beyond secondary level) treatment plant. This Order contains a limitation requiring an average of 85 percent removal of BOD<sub>5</sub> and TSS over each calendar month.

- a. **Flow.** The Facility is to provide a tertiary level of treatment for up to a design flow of 0.2 mgd. Therefore, this Order contains an Average Daily Discharge Flow effluent limit of 0.2 mgd.
- b. **pH.** Federal Regulations, 40 CFR 133, also establish technology-based effluent limitations for pH. The secondary treatment standards require the pH of the effluent to be no lower than 6.0 and no greater than 9.0 standard units.

#### Summary of Technology-based Effluent Limitations Discharge Point 001

**Table F-4. Summary of Technology-based Effluent Limitations**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	--	--	0.2	--	--
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day <sup>1</sup>	17	25	33	--	--
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day <sup>1</sup>	17	25	33	--	--
pH	standard units	--	--	--	6.0	9.0

<sup>1</sup> Based on a design treatment capacity of 0.2 mgd.

- a. **Percent Removal:** The average monthly percent removal of BOD<sub>5</sub> and TSS shall not be less than 85 percent.

#### C. Water Quality-Based Effluent Limitations

##### 1. Scope and Authority

As specified in section 122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an in-stream excursion above any state water quality standard. The process for determining reasonable potential

and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the California Toxics Rule (CTR) and National Toxics Rule (NTR).

## 2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

- a. **Receiving Water.** The Discharger discharges to an unnamed tributary to Lurline Creek, which is tributary to Lurline Creek, the Colusa Trough, and Colusa Basin Drain. The beneficial uses of the unnamed tributary to Lurline Creek are summarized in Section III.C.1 of this Fact Sheet.
- b. **Hardness.** While no effluent limitation for hardness is necessary in this Order, hardness is critical to the assessment of the need for, and the development of, effluent limitations for certain metals. The *California Toxics Rule* and the *National Toxics Rule* contain water quality criteria for seven metals that vary as a function of hardness, i.e., as the hardness value decreases, the corresponding water quality criteria also decrease. The hardness-dependent metal criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc. Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. In the absence of the option of including condition-dependent, "floating" effluent limitations that are reflective of actual hardness conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions.

The SIP does not address how to determine hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water. The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO<sub>3</sub>), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones.<sup>1</sup> The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. The point in the receiving water affected by the discharge is downstream of the discharge. As the effluent mixes with the receiving water, the hardness of the receiving water can change. Therefore, it is appropriate to use the ambient hardness downstream of the discharge that is a mixture of the effluent and receiving water for the determination of the CTR hardness-dependent metals criteria. Recent studies indicate that using the lowest recorded receiving water hardness for establishing water quality criteria is not always protective of the receiving water under various mixing conditions (e.g. when the effluent hardness is less than the receiving water hardness). The studies evaluated the relationships between hardness and the CTR metals criterion that is calculated

using the CTR metals equation. The equation describing the total recoverable regulatory criterion is as follows:

Total Recoverable Criterion =  $e^{m[\ln(H)] + b}$ , where  
m = criterion specific constant,  
H = effluent hardness, and  
b = criterion specific constant

The constants "m" and "b" are specific to both the metal under consideration, and the type of total recoverable criterion, i.e. acute or chronic.

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. The State Water Board, in footnote 19 to Water Quality Order No. 2004-0013, stated: "We note that...the Regional Water Board...applied a variable hardness value whereby effluent limitations will vary depending on the actual, current hardness values in the receiving water. We recommend that the Regional Water Board establish either fixed or seasonal effluent limitations for metals, as provided in the SIP, rather than 'floating' effluent limitations."

In the absence of the option of including condition-dependent, "floating" effluent limitations that are reflective of actual conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. Recent studies indicate that using the receiving water lowest hardness for establishing water quality criteria is not the most protective for the receiving water. The Regional Water Board has evaluated these studies and concurs that for some parameters the beneficial uses of the receiving water are best protected using the lowest hardness value of the effluent as representative of worst-case receiving water hardness, while for some parameters, the use of both the lowest hardness value of the receiving water and the lowest hardness value of the effluent is the represents receiving water hardness that is most protective.

Because of the non-linearity of the Total Recoverable Criterion equation, the relationship can either be concave upward or concave downward depending in the criterion-specific constants. For those contaminants whereby the regulatory criteria exhibit a concave downward relationship as a function of hardness (e.g., acute and chronic copper, chromium(III), nickel, and zinc; and chronic cadmium), the use of the lowest recorded effluent hardness for establishment of water quality objectives is fully protective of all beneficial uses regardless of whether the effluent or receiving water hardness is higher. No receiving water hardness data was available for the Facility. Hardness of the effluent ranged from 157 mg/L to 429 mg/L with an average of 282 mg/L based on 27 samples collected between June 2002 and December 2006. Since the unnamed tributary to Lurline Creek is an intermittent stream, the reasonable lowest effluent hardness of 157 mg/L as  $\text{CaCO}_3$  (recorded on June 2005) was used to represent the reasonable

lowest downstream receiving water hardness for purposes of establishing WQBELs.

- c. **Assimilative Capacity/Mixing Zone.** The unnamed tributary to Lurline Creek is an intermittent stream and there are periods of no flow available for dilution. Therefore, no dilution credits have been granted for the effluent discharge. Hence, all effluent limitations must be met at the point of the discharge into the receiving water.

### 3. Determining the Need for WQBELs

- a. CWA section 301(b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include Regional Water Board Basin Plan beneficial uses and narrative and numeric water quality objectives, State Water Board-adopted standards, and federal standards, including the CTR and NTR. The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, and tastes and odors. The narrative toxicity objective states: *"All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."* (Basin Plan at III-8.00.) With regards to the narrative chemical constituents objective, the Basin Plan states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, *"...water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)"* in Title 22 of CCR. The narrative tastes and odors objective states: *"Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses."*
- b. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for ammonia, chlorodibromomethane, cyanide, dichlorobromomethane, pH, salinity (chloride, electrical conductivity @ 20 °C, and total dissolved solids), and tributyltin. A summary of the reasonable potential analysis (RPA) is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.
- c. The Regional Water Board conducted the RPA in accordance with Section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water Board may

use the SIP as guidance for water quality-based toxics control.<sup>1</sup> The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.*" Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents.

- d. WQBELs were calculated in accordance with section 1.4 of the SIP, as described in Attachment F, Section IV.C.4.
- e. **Ammonia.** Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger does not currently use nitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia would violate the Basin Plan narrative toxicity objective. Applying 40 CFR section 122.44(d)(1)(vi)(B), it is appropriate to use USEPA's Ambient National Water Quality Criteria for the Protection of Freshwater Aquatic Life for ammonia, which was developed to be protective of aquatic organisms.

USEPA's *Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life*, for total ammonia, recommends acute (1-hour average; criteria maximum concentration) standards based on pH and chronic (30-day average; criteria continuous concentration) standards based on pH and temperature. It also recommends a maximum 4-day average concentration of 2.5 times the criteria continuous concentration. USEPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. USEPA's recommended criteria are show below:

$$CCC_{30-day} = \left( \frac{0.0577}{1 + 10^{7.688 - pH}} + \frac{2.487}{1 + 10^{pH - 7.688}} \right) \times MIN(2.85, 1.45 \cdot 10^{0.028(25 - T)}), \text{ and}$$
$$CMC = \left( \frac{0.275}{1 + 10^{7.204 - pH}} + \frac{39.0}{1 + 10^{pH - 7.204}} \right),$$

where  $T$  is in degrees Celsius

The previous Order contained "floating" effluent limitations for ammonia. In the absence of the option of including condition-dependant, "floating" effluent

<sup>1</sup> See, Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City)

limitations, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses.

The maximum permitted effluent pH is 8.5. The Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. The maximum observed 30-day average effluent temperature was 80.4 °F (26.9 °C), for the 30-day periods ending April 2007. Due to periods of no flow in the upstream receiving water (RSW-001) no data is available for RSW-001. The maximum observed 30-day downstream receiving water (RSW-002) temperature was 76.6°F (24.8 °C), for the 30-day periods ending April 2007.

Using a pH value of 8.5, the resulting 1-hour average CMC is 2.14 mg/L (as N). Using a pH value of 8.5 and the worst-case temperature values of 80.4 °F (26.9 °C) on a 30-day basis, the resulting 30-day average CCC is 0.49 mg/L (as N). The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on a 30-day average CCC of 0.49 mg/L (as N), the 4-day average concentration that should not be exceeded is 1.23 mg/L (as N).

The MEC for ammonia was 12 mg/L, based on 274 samples collected between February 2002 and October 2006. Therefore, ammonia in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan's narrative toxicity objective.

The Regional Water Board calculates WQBELs in accordance with the SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day chronic criteria. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day chronic criteria was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day, and 30-day chronic criteria is then selected for deriving the AMEL and the MDEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures.

This Order contains a final AMEL and MDEL for ammonia of 0.6 mg/L and 1.5 mg/L, respectively, based on USEPA's National Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life and to assure the treatment process adequately nitrifies the waste stream to protect the aquatic habitat beneficial uses (see Table F-7 for WQBEL calculations).

Based on the sample results in the effluent, it appears that the Discharger may be in immediate non-compliance upon issuance of the permit. New or modified control measures may be necessary in order to comply with the effluent



limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Basin Plan for the Sacramento and San Joaquin River Basins includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after 25 September 1995 (see Basin Plan at page IV-16). The WQBELs for ammonia are based on a new interpretation of the narrative standard for protection of receiving water beneficial uses. Therefore, a compliance schedule for compliance with the ammonia effluent limitations is established in the Order.

An interim performance-based maximum daily effluent limitation of 8 mg/L has been established in this Order. The interim limitation was determined as described in Section IV.E.1 of this Fact Sheet, and is in effect through 17 May 2010. As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final ammonia effluent limitations. In addition, the Discharger shall submit an engineering treatment feasibility study and prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3).

- f. **Bis (2-ethylhexyl) phthalate.** Bis (2-ethylhexyl) phthalate is used primarily as one of several plasticizers in polyvinyl chloride (PVC) resins for fabricating flexible vinyl products. According to the Consumer Product Safety Commission, USEPA, and the Food and Drug Administration, these PVC resins are used to manufacture many products, including soft squeeze toys, balls, raincoats, adhesives, polymeric coatings, components of paper and paperboard, defoaming agents, animal glue, surface lubricants, and other products that must stay flexible and noninjurious for the lifetime of their use. The State MCL for bis (2-ethylhexyl) phthalate is 4 µg/L and the USEPA MCL is 6 µg/L. The NTR criterion for human health protection for consumption of water and aquatic organisms is 1.8 µg/L and for consumption of aquatic organisms only is 5.9 µg/L.

The MEC for bis (2-ethylhexyl) phthalate was 7 µg/L, based on seven samples collected between March 2002 and October 2006 (three samples were non-detects, two DNQ samples were 0.8 µg/L and 1 µg/L, and one sample with bis(2-ethylhexyl) phthalate found in method blank was 4 µg/L).

Since bis (2-ethylhexyl) phthalate is a common contaminant of sample containers, sampling apparatus, and analytical equipment, and sources of the detected bis (2-ethylhexyl) phthalate may be from plastics used for sampling or analytical equipment, the Regional Water Board has determined there is uncertainty in the available data. Consequently, there is insufficient information to complete a reasonable potential analysis at this time. In accordance with Section 1.2 of the SIP Regional Water Board staff shall have discretion to consider if any data are inappropriate or insufficient for use in implementing the policy. Where Regional Water Board staff have found the data are insufficient to determine reasonable potential. Section 1.3 of the SIP allows the Board to implement monitoring for the parameter of concern. Therefore, additional

monitoring has been established for bis (2-ethylhexyl) phthalate. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding an appropriate effluent limitation.

- g. **Chlorine, Total Residual.** The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. The Discharger uses sodium bisulfate to dechlorinate the effluent prior to discharge to the unnamed tributary to Lurline Creek. Due to the existing chlorine use and the potential for chlorine to be discharged, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

The USEPA *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001) contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average one-hour limitation is considered more appropriate than an average daily limitation. Average 1-hour and 4-day limitations for chlorine, based on these criteria, are included in this Order. The previous Order contained chlorine residual effluent limitations of 0.011 mg/L (0.018 lbs/day) for a 4-day average, 0.019 mg/L (0.032 lbs/day) for a 1-hour average, 0.010 mg/L (0.017 lbs/day) for an average monthly, and 0.012 mg/L (0.020 lbs/day) for an average daily. The application of the 1-hour and 4-day average criteria as effluent limitations and requiring an MDEL and AMEL based on these criteria is redundant. Since applying the 1-hour and 4-day average criteria is more stringent, the less stringent MDEL and AMEL included in the previous Order have not been carried forward. The previous Order also included mass limitations, which are unnecessary and have not been carried forward. This Order does not allow for an increase in flow, therefore, removing the mass limits complies with federal antibacksliding regulations. Based on evaluation of effluent data, the Discharger can immediately comply with these effluent limitations for total residual chlorine.

The total residual chlorine limitations required in this Order are protective of aquatic organisms in the undiluted discharge. If compliance is maintained, the Regional Water Board does not anticipate residual chlorine impacts to benthic organisms.

- h. **Chlorodibromomethane.** The CTR includes a chlorodibromomethane criterion of 34 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which organisms are consumed. The MEC for chlorodibromomethane was 39.7 µg/L, based on eight samples collected between March 2002 and October 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for chlorodibromomethane.

No dilution is allowed due to periods of no flow in the receiving water. An AMEL and MDEL for chlorodibromomethane of 34 µg/L and 68 µg/L, respectively, are included in this Order based on the CTR criterion for the protection of human health (see Table F-8 for WQBEL calculations).

The Discharger is unable to comply with the new chlorodibromomethane effluent limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Section IV.E.1. of this Fact Sheet, an interim performance-based maximum daily limitation of 124 µg/L was calculated.

Section 2.1 of the SIP provides that: "Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit." Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: ... "(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable." The Discharger has not provided this information. This Order requires the Discharger to submit this information by the effective date of this Order. As long as the Discharger submits an acceptable infeasibility analysis, the final water quality-based effluent limitations for chlorodibromomethane become effective on **18 May 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final chlorodibromomethane effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for chlorodibromomethane, the Discharger shall develop a pollution prevention program in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study.

- i. **Cyanide.** The CTR includes maximum 1-hour average and 4-day average cyanide concentrations of 22 µg/L and 5.2 µg/L, respectively, for the protection of freshwater aquatic life. The MEC for cyanide was 66 µg/L, based on eight samples collected between March 2002 and October 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for cyanide. No dilution is allowed due to periods of no flow in the receiving water. An AMEL and MDEL for cyanide of 4.3 µg/L and 8.5 µg/L, respectively, are included in this Order based on CTR

criteria for the protection of freshwater aquatic life (see Table F-9 for WQBEL calculations).

The Discharger is unable to comply with the new cyanide effluent limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Section IV.E.1. of this Fact Sheet, an interim performance-based maximum daily limitation of 205 µg/L was calculated.

Section 2.1 of the SIP provides that: *"Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit."* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *..."(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to submit this information by the effective date of this Order. As long as the Discharger submits an acceptable infeasibility analysis, the final water quality-based effluent limitations for cyanide become effective on **18 May 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final cyanide effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for cyanide, the Discharger shall develop a pollution prevention program in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study.

- j. **Dichlorobromomethane.** The CTR includes a dichlorobromomethane criterion of 46 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which organisms are consumed. The MEC for dichlorobromomethane was 73.4 µg/L, based on eight samples collected between March 2002 and October 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for dichlorobromomethane.

No dilution is allowed due to periods of no flow in the receiving water. An AMEL and MDEL for dichlorobromomethane of 46 µg/L and 92 µg/L, respectively, are included in this Order based on based on the CTR criterion for the protection of human health (See Attachment F, Table F-10 for WQBEL calculations).

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E.1., an interim performance-based maximum daily limitation of 228 µg/L was calculated.

Section 2.1 of the SIP provides that: *"Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit."* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *... "(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This Order requires the Discharger to submit this information by the effective date of this Order. As long as the Discharger submits an acceptable infeasibility analysis, the final water quality-based effluent limitations for dichlorobromomethane become effective on **18 May 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final dichlorobromomethane effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for dichlorobromomethane, the Discharger shall develop a pollution prevention program in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study.

**k. Electrical Conductivity. (see Subsection for Salinity)**

- l. Fluoride.** *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985), recommends that the fluoride concentration in waters used for agricultural irrigation not exceed 1,000 µg/L. The agricultural water quality goal for fluoride was established in Ayers and Westcot *"because of concern for long-term build-up of trace elements in the soil and for protection of the agricultural soil resource from irreversible damage."* The Regional Water Board uses the agricultural water goal as a screening level to evaluate reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective.

The MEC for fluoride was 1,600 µg/L, based on eight samples collected between

March 2002 and October 2006. Two of the remaining seven samples were non-detect, one was an estimated value, and the others ranged in concentrations of 290 to 800 µg/L (the average of the four detected values was 314 µg/L). The agricultural water quality goal was developed to be protective of long-term effects on agricultural soil resources, therefore, Regional Water Board staff finds that it is appropriate to evaluate reasonable potential for the discharge to cause or contribute to an exceedance of the agricultural water quality goal using the observed annual average effluent concentration. The maximum annual average fluoride concentration in the effluent was 780 µg/L, which was observed in 2002 as shown in the table below.

**Table F-5. Effluent Fluoride Concentrations**

Date	Fluoride Concentration (µg/L)	Annual Average Fluoride Concentration (µg/L)
March 2002	1,600	780
May 2002	800	
August 2002	290	
November 2002	420	
October 2003	750 (DNQ)	750
October 2004	520	520
October 2005	ND	ND
October 2006	ND	ND

Additionally, as shown in the table above, concentrations of fluoride have generally decreased since 2002 to levels below detection limits. Therefore, Regional Water Board staff concludes that (1) the effluent does not exhibit reasonable potential to cause or contribute to the Basin Plan's narrative toxicity objective for fluoride, and (2) effluent limitations and compliance monitoring for fluoride are not necessary in this Order.

- m. **Persistent Chlorinated Hydrocarbon Pesticides.** 4,4'-DDE was detected in one sample out of a total of seven samples at a concentration of 0.024 µg/L. 4,4'-DDE is a chlorinated hydrocarbon pesticide. The Basin Plan requires that no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; total chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. In addition to 4,4'-DDE, chlorinated hydrocarbon pesticides include aldrin, chlordane, dieldrin, endrin, endrin aldehyde, heptachlor, heptachlor epoxide, alpha BHC, beta BHC, delta BHC, gamma BHC (lindane), 4,4'-DDD, 4,4'-DDT, alpha endosulfan, beta endosulfan, endosulfan sulfate, and toxaphene. Effluent limitations for persistent chlorinated hydrocarbon pesticides are not included in this Order as the pollutant is not expected in the discharge; the Regional Water Board has determined there is insufficient information to complete a reasonable potential analysis at this time. In accordance with Section 1.2 of the SIP Regional Water Board staff shall have discretion to consider if any data are inappropriate or insufficient for use in implementing the policy. Where Regional Water Board staff have found the data

are insufficient to determine reasonable potential. Section 1.3 of the SIP allows the Board to implement monitoring for the parameter of concern. Therefore, additional monitoring has been established for 4,4-DDE. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, then this Order may be reopened and modified by adding an appropriate effluent limitation.

- n. **Pathogens.** The beneficial uses of the receiving water include water contact recreation, and agricultural irrigation supply. To protect these beneficial uses, the Regional Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The principal infectious agents (pathogens) that may be present in raw sewage may be classified into three broad groups: bacteria, parasites, and viruses. Tertiary treatment, consisting of chemical coagulation, sedimentation, and filtration, has been found to remove approximately 99.5% of viruses. Filtration is an effective means of reducing viruses and parasites from the waste stream. The wastewater must be treated to tertiary standards (filtered), or equivalent, to protect contact recreational and food crop irrigation uses.

The California Department of Public Health (DPH, formerly known as California Department of Health Services or DHS) has developed reclamation criteria, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median. As coliform organisms are living and mobile, it is impracticable to quantify an exact number of coliform organisms and to establish weekly average limitations. Instead, coliform organisms are measured as a most probable number and regulated based on a 7-day median limitation.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as "*...an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.*" Title 22 is not directly applicable to surface waters; however, the Regional Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by DPH's reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens. The method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DPH.

In addition to coliform testing, an operational specification for turbidity has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. The tertiary treatment process, or equivalent, is capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations.

This Order contains effluent limitations and a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. In accordance with CWC section 13241, the Regional Water Board previously considered the following in Order No. R5-2002-0022:

- i. The past, present and probable future beneficial uses of the receiving stream include agricultural irrigation, agricultural stock watering, water contact recreation, including canoeing and rafting, warm freshwater habitat, cold freshwater habitat, warm migration of aquatic organisms, warm spawning, reproduction, and/or early development, wildlife habitat, groundwater recharge and freshwater replenishment.
- ii. The environmental characteristics of the hydrographic unit, including the quality of the available water, will be improved by the requirement to provide tertiary treatment for this wastewater discharge. Tertiary treatment will allow for the reuse of the undiluted wastewater for food crop irrigation and contact recreation activities that would otherwise be unsafe according to recommendations from the DPH.
- iii. Fishable and swimmable water quality conditions can be reasonably achieved through the coordinated control of all factors that affect water quality in the area.
- iv. The economic impact of requiring an increased level of treatment has been considered. The Discharger has estimated that the increased level of treatment will cost approximately \$6.5 million. The loss of beneficial uses within downstream waters, without the tertiary treatment requirement, which includes prohibiting the irrigation of food crops and prohibiting public access for contact recreational purposes, would have a detrimental economic impact. In addition to pathogen removal to protect irrigation and recreation, tertiary treatment may also aid in meeting discharge limitations for other pollutants, such as heavy metals, reducing the need for advanced treatment specific for those pollutants.



- v. The requirement to provide tertiary treatment for this discharge will not adversely impact the need for housing in the area. The potential for developing housing in the area will be facilitated by improved water quality, which protects the contact recreation and irrigation uses of the receiving water. DPH recommends that, in order to protect the public health, relatively undiluted wastewater effluent must be treated to a tertiary level for contact recreational and food crop irrigation uses. Without tertiary treatment, the downstream waters could not be safely utilized for contact recreation or the irrigation of food crops.
- vi. It is the Regional Water Board's policy, (Basin Plan, page IV-12.00, Policy 2) to encourage the reuse of wastewater. The Regional Water Board requires dischargers to evaluate how reuse or land disposal of wastewater can be optimized. The need to develop and use recycled water is facilitated by providing a tertiary level of wastewater treatment that will allow for a greater variety of uses in accordance with CCR, Title 22.
- vii. The Regional Water Board has considered the factors specified in CWC section 13263, including considering the provisions in CWC section 13241, in adopting the disinfection and filtration requirements under Title 22 criteria. The Regional Water Board finds, on balance, that these requirements are necessary to protect the beneficial uses of the receiving water, including water contact recreation and irrigation uses.
- o. **pH.** The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "...pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses." Effluent Limitations for pH are included in this Order based on the Basin Plan objectives for pH.
- p. **Salinity.** The discharge contains total dissolved solids (TDS), chloride, and electrical conductivity (EC). These are water quality parameters that are indicative of the salinity of the water. Their presence in water can be growth limiting to certain agricultural crops and can affect the taste of water for human consumption. The Basin Plan contains a chemical constituent objective that contains a narrative objective for EC, TDS, and chloride.

**Table F-6. Salinity Water Quality Criteria/Objectives**

Parameter	Agricultural WQ Goal <sup>1</sup>	Effluent	
		Average	Maximum
EC (µmhos/cm)	Varies <sup>2</sup>	1770	4030
TDS (mg/L)	Varies	1023	1280
Chloride (mg/L)	Varies	255	307

<sup>1</sup> Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985)

- 2 The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700  $\mu\text{mhos/cm}$  is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.

- i. **Chloride.** The recommended agricultural water quality goal for chloride, that is used as a screening level for the reasonable potential analysis, is 106 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 106 mg/L water quality goal is intended to protect against adverse effects on sensitive crops when irrigated via sprinklers.

Chloride concentrations in the effluent ranged from 194 mg/L to 307 mg/L, with an average of 255 mg/L, for eight samples collected by the Discharger from March 2002 through October 2006. The effluent exceeds the agricultural water quality goal of 106 mg/L.

- ii. **Electrical Conductivity @ 20 °C (EC).** The agricultural water quality goal, that is used as a screening level for the reasonable potential analysis, is 700  $\mu\text{mhos/cm}$  as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700  $\mu\text{mhos/cm}$  agricultural water quality goal is intended to prevent reduction in crop yield, i.e., a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. These crops are either currently grown in the area or may be grown in the future. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

The Regional Water Board uses the agricultural water quality goal for electrical conductivity of 700  $\mu\text{mhos/cm}$  as a screening value for conducting a reasonable potential analysis. A review of the Discharger's monitoring reports from February 2002 through April 2007 shows an annual average effluent EC of 1770  $\mu\text{mhos/cm}$ , with a range from 750  $\mu\text{mhos/cm}$  to 4030  $\mu\text{mhos/cm}$  for 287 samples. These levels exceed the agricultural water quality goal, or screening value, of 700  $\mu\text{mhos/cm}$ .

- iii. **Total Dissolved Solids (TDS).** The recommended agricultural water quality goal for TDS, that is used as a screening level for the reasonable potential analysis, is 450 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). Water Quality for Agriculture evaluates the impacts of salinity levels on crop tolerance and yield reduction, and establishes water quality goals that are protective of the agricultural uses. The 450 mg/L water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of

The average TDS effluent concentration was 1023 mg/L and a ranged from 790 mg/L to 1280 mg/L for 27 samples collected by the Discharger from June 2002 through October 2006. These concentrations exceed the applicable water quality objectives. These data indicate the effluent exceeds the agricultural water quality goal for TDS.

- iv. **Salinity Effluent Limitations.** The Regional Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the March 16, 2006, Regional Water Board meeting, Board Member Dr. Karl Longley recommended that the Regional Water Board continue to exercise its authority to regulate discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, *"The process of developing new salinity control policies does not, therefore, mean that we should stop regulating salt discharges until a salinity Policy is developed. In the meantime, the Board should consider all possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Board's policy to actively participate in policy development."*

Effluent concentrations of electrical conductivity exceed the applicable screening level. However, site-specific numerical salinity objectives or receiving water information regarding the levels of salinity necessary to protect beneficial uses is not available. Therefore, final effluent limitations are not established in this Order. If the Discharger does not cease discharge to surface water in accordance with Time Schedule Order No. R5-2007-0073, this Order requires the Discharger to conduct a site-specific studies to determine the appropriate electrical conductivity level to protect beneficial uses. It is the intent of the Regional Water Board to include a final electrical conductivity effluent limitation in a subsequent permit renewal or amendment (if applicable), based on the results of an approved site-specific salinity receiving water study.

The Antidegradation Policy (Resolution No. 68-16) requires that the Discharger implement best practicable treatment or control (BPTC) of its discharge. For salinity, the Regional Water Board is considering limiting effluent salinity of municipal wastewater treatment plants to an increment of 500  $\mu\text{mhos/cm}$  over the salinity of the municipal water supply or at existing level. This Order includes an annual average performance-based effluent limitation of 2000  $\mu\text{mhos/cm}$  (rounded up from 1942  $\mu\text{mhos/cm}$ , which is the